

रामन अनुसंधान संस्थान
RAMAN RESEARCH INSTITUTE

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बेंगलूरु/ Bengaluru – 560080



इलेक्ट्रो-ऑप्टिक मॉड्युलेटर की खरीद के लिए निविदा
Tender for Procurement of Electro-Optic Modulators

REF No: NIT-250418-2025-2026

निविदा प्रलेख
TENDER DOCUMENT
2025 – 2026

25.07.2025

टिप्पणी: इस निविदा में भागीदारी केवल दो-बोली प्रणाली में ऑफलाइन मोड के माध्यम से होगी।

Note: Participation for this tender is only through OFFLINE mode in Two-Bid System.



Due date for submission of Bid: 18.08.2025, 2PM.

Technical Bid will be opened on 19.08.2025 at 4PM.

The Raman Research Institute invites Sealed offline Tenders for **Procurement of Electro-Optic Modulators directly** from the manufacturers or their authorized agents, adhering to the specification, terms and conditions given below:

TECHNICAL SPECIFICATION:

Sl. No	Item Description	Qty.	Compliance (Y/N)
1	Phase Modulated Electro-Optic Modulator - Resonant, free-space electro-optic PHASE modulator for NIR Laser applications - Optimised resonance frequency: 25 MHz +/-0.5MHz - RF bandwidth (-3dB): typ. < 2% of optimised frequency - RF connector: SMA-f, straight with impedance @ 25MHz of 50 Ohms - Return loss (S11): typ. < -10dB - Housing dimensions: 40x40x40 mm³ - Mounting: 3x M4 for s- & p-pol. - Crystal aperture: 3x3mm², CA ≥ 90% - Wavelength Range: 630 - 1100 nm (R_avg < 1%, T_avg > 95%) (will work with 780 nm and 960 nm) - Wavefront distortion (WFD): < $\lambda/6$ (633nm). - Max. recommended laser intensity @ λ_1, λ_2: 0.1 W/mm² - Laser insertion loss @ λ_1, λ_2 < 2% - Modulation efficiency @ (1rad): typ. (14 16 +/-1) dBm - Max. RF power: 0.5W - Applications: Laser Frequency Stabilisation (PDH) locking	2	
2	Phase modulated Electro-Optic Modulator - Resonant, high-Q electro-optic PHASE modulator - Optimised resonance frequency: 6.835 GHz - RF bandwidth (-3dB): typ. 30 MHz - Frequency tuning range: min. 6.835 GHz +/- 40 MHz (incl. tuning tool) No. of tuners: 2 - RF connector: SMA-f, straight - Impedance: 50 Ohm - Return loss: typ. < -30dB - Housing: 60x30x18 mm³ - Mounting: 4x M2.5 & 1x M4	1	



	- Aperture: 2x2 mm² - Laser wavelength λ_0: 780nm - AR @ λ_0: R < 0.5% - Wavefront distortion: < $\lambda/6$@ (633nm) - Recommended max. laser intensity @ λ_0: < 5W/mm² - Insertion loss (LIL) @ λ_0: < 3% - Required RF power for 1rad @ $\{\lambda_0\}$: (30 +/- 1) dBm - Max. RF power: 5W - Application: Raman Transitions in Rb 87		
3	RF- Driver - RF Driver for resonant, high-Q electro-optic modulators - Frequency resolution.: < 2 kHz, - RF amplifier maximum power $\geq$ 32 dBm - Compatible with Phase modulated Electro-Optic Modulator, optimised at resonance frequency: 6.835 GHz - RF level resolution: 0.1dB - Output connector: SMA-f, bulkhead, 50 Ohms - Full front-panel control and display controllable (USB) - Including Q-Lock (automatic EOM resonance lock & tracking) - Standalone benchtop version - Power supply: 90- 260VAC, 50Hz	1	
4	EOM alignment Stage - EOM alignment stage for precision alignment of the EOM concerning the laser beam 5-axis stage	4	
5	Amplitude Modulated Electro-Optic Modulators - Resonant, free-space electro-optic amplitude modulator - Could be derived at a fixed resonance frequency within 0.1 - 2 MHz - Optimised resonance frequency: 1 MHz (+/- 50kHz) - RF bandwidth (-3dB): typ. < 2% of 1MHz - RF connector: SMA-f, straight - Impedance: 50 Ohms - Return loss < -10dB - Mounting: 4x M2.5 (bottom) - Optical wavelength will be working at: 480 nm - Wavefront distortion: < $\lambda/8$ - DC extinction ratio: typ. $\geq$ 25dB - Maximum laser intensity: 5W/mm² - Required RF power for full modulation: 19 +/- 1 dBm - Maximum RF power: 1W	1	



6	Amplitude Modulated Electro-Optic Modulators • Resonant, free-space electro-optic amplitude modulator • Could be derived at a fixed resonance frequency within 0.1 - 2 MHz • Optimised resonance frequency: 1 MHz (+/- 50kHz) • RF bandwidth (-3dB): typ. < 2% of 1MHz • RF connector: SMA-f, straight • Impedance: 50 Ohms • Return loss < -10dB • Mounting: 4x M2.5 (bottom) • Optical wavelength will be working at: 780 nm • Wavefront distortion: < $\lambda/8$ • DC extinction ratio: typ. ≥ 25dB • Maximum laser intensity: 5W/mm² • Required RF power for full modulation: 19 +/-1 dBm • Maximum RF power: 1W	1	
7	RF Driver • RF Driver for resonant, high-Q free-space electro-optic modulators • Frequency range: 0.1-2 MHz • Resolution: < 1 kHz • Power output: max 1W. • RF level resolution: 0.1dB • Output connector: SMA-f, bulkhead, 50 Ohms • Full front-panel control via display • Standalone benchtop version • power supply 90-260VAC, 50Hz	2	

GENERIC:

1. The Institute is eligible to issue Central Excise Duty Exemption Certificate or Customs Duty Concession Certificate. The Institute is not eligible to issue State Goods and Service Tax/ Central Goods and Service Tax Concession Certificate.
2. The Institute reserves the right to modify the technical specification or the required quantity at any time but within one week before the due date.
3. The Institute reserves the right to reject any or all of the bids received without assigning any reason. It also reserves the right to accept an offer other than the lowest.
4. The Institute reserves the right to postpone/extend the due date for submission of the bid without assigning any reason.
5. The Institute reserves the right to call potential suppliers for technical discussions and product demonstrations.



6. Any Technical clarification required towards submission of offer may please be mailed to purchase@rri.res.in

ELIGIBILITY CRITERIA:

1. **Experience Criteria:** The Bidder or its OEM {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU / Public Listed Company for **3 years** before the bid opening date. A proof should be attached.
2. **Manufacturer Authorization Form (MAF):** Bidder should be Original Equipment Manufacturer (OEM). In case of an authorized agent/partner/distributor service provider having direct purchase and support agreement with OEM and/or submitting the bid on behalf of OEM, should submit a valid MAF/Certificate from OEM/ or Original Service provider to that effect.
3. Details with contact information and telephone numbers for service support of the products should be provided. Escalation matrix with contact information and telephone numbers should also be provided.
4. The bidder must NOT be blacklisted by Central Government, State Government or any Organization in India. A certificate or undertaking to this effect must be submitted.
5. The bidder should NOT be under liquidation, court receivership or similar proceedings, should NOT be bankrupt. Bidder to upload undertaking to this effect with bid.
6. **Net-Worth:** The net worth of the Bidder firm should not be negative on as on 31.03.2025 and should have not eroded by more than 30% (thirty per cent) in the last three financial years. **A Certificate to this effect as Certified by a Chartered Accountant should be submitted along with the Technical Bid.**
7. I) As per the Government of India, Ministry of Commerce and Industry and Department for Promotion of Industry and Internal Trade (Public Procurement Section) Order No. P-45021/2/2017-PP (BE-II)-Part(4)Vol. II dated 19-07-2024.
 - a) **The Bidder shall produce a certificate whether he/she belong to “Class – I’ and ‘Class – II supplier’ and ‘Non – Local suppliers’ with percentage of local content.**
 - b) Class – I’ and ‘Class – II supplier’ and Non – Local suppliers as classified under above mentioned Order are eligible to submit the offer. While finalizing the quotation, the instructions given in the above order shall prevail.
- II) As per the Government of India, Ministry of Finance and Department of Expenditure, Public Procurement Division – Office Memorandum No. F.No.6/18/2019-PPD dated 23.07.2020, the Institute reserves the right by order in writing, impose restrictions, including prior registration and/or screening, on procurement from bidders from a country or countries, or a class of countries, on grounds of Defense of India, or matters directly or indirectly related thereto including national security; no procurement shall be made in violation of such restrictions.



EVALUATION OF BIDS:

1. The bids should be complete in all respects and the details specified in this request should be adhered to and **submitted on or before bid end date**.
2. Bids should be valid for **180** days from bid end date or any extension to it.
3. The quoted price should include P&F and Freight Charges, Insurance, Loading & Unloading Charges etc.
4. The bids conforming to the eligibility criteria only will be considered for further evaluation.
5. The bids will be shortlisted on the basis of technical parameters, features, standards compliance of all materials and equipment used, etc.
6. For Technical evaluation, bidders have to ensure the availability of appropriate expert, along with every type of documentation from their organization for interacting with the Institute
7. The Financial Bids will be opened only of those technical bids found suitable and approved by our Technical Evaluation Committee.

TERMS & CONDITIONS:

1. The bid shall be divided into two parts:
 - I) The first part should be “Technical” Bid containing only detailed specifications for tendered: **Procurement of Electro-Optic Modulators, and EMD for Rs. 1,00,000/-**. The details include:
 - a) Detailed literature including Data Sheets of quoted products.
 - b) Supporting Documents eligibility criteria such as MSME, OEM authorization letter, Experience certificate. etc
 - c) **The first part (Technical Bid) shall not contain any financial aspects of the offer.** It shall contain only a cross reference to the second part (Financial Bid).
 - II) The Second part (Financial Bid) shall contain detailed financial outlay with List of deliverables / Bill of materials / Bill of Quantities and services, unit price of items as in the technical bid (i.e., First Part).
2. Bidder should submit the **EMD of Rs. 1,00,000/- (Rupees One Lakh only)** along with technical bid. Payment should be by way of DD / Banker’s cheque only, drawn in favour of **“The Administrative Officer, Raman Research Institute, Bangalore”**. No other form of payment will be accepted. The Tenders without the EMD will be rejected.
3. The MSME Units/Enterprises claiming exemption of EMD should submit MSME UDYOG AADHAAR MEMORANDUM or registration certificate issued by District Industries Centre (DIC) / Khadi & Industries board (KVIB) / Coir board / National Small Industries Corporation (NSIC) / Directorate of Handicrafts and handlooms or any other body specified by Ministry of MSME. The memorandum / certificate submitted should be for the scheduled items of this bid and shall be valid as on bid end date /extended due date of the bid. However, MSME Unit/Enterprises must submit a duly signed **Bid Security Declaration** in lieu of EMD as per the Form of Bid-Security Declaration.



4. The successful Bidder's EMD will be discharged upon the Bidder furnishing the Performance Security (Bank Guarantee), without any interest.
5. The refund of EMD for unsuccessful bidders will be made through Cheque or Electronic mode within a month after finalization of bid.
6. **The EMD may be forfeited:**
 - a) If a Bidder withdraws or amends or modifies or impairs or derogates their bid during the period of bid validity specified by the Bidder on the Bid form;

OR

 - b) In case of a successful Bidder, if the Bidder fails to furnish order acceptance or fails to sign the order and/or fails to furnish Performance Bank Guarantee within 15 days from the date of issue of Order.
7. **Performance Bank Guarantee (PBG):** The bidder should provide **3%** (Three percent) of the order value in the form of a Bank Guarantee towards satisfactory performance after supply. The PBG should be valid throughout the warranty period of **One Year plus Six months** as claim period, from the date of supply. The said PBG shall be returned/refunded to the bidder after satisfactory completion of supply of goods as well as warranty period and claim period as per the terms of the Order. In case of failure to render the ordered service, either at the time of execution or during the warranty period or non-compliance of due performance of order, the PBG will be forfeited.
8. The Bidder shall not assign the Order in whole or part without obtaining the prior written consent of Institute. The Bidder shall not sub-contract the Order in whole or part to any entity without obtaining the prior written consent of Institute and the Bidder shall, notwithstanding the consent and assignment/sub-contract, remain jointly and severally liable and responsible to Institute together with the assignee/sub-contract, for and in respect of the due performance of the Order and the Bidder's obligations there under.
9. Without prejudice to Institute's right to price adjustment by way of discount or any other right or remedy available to Institute, Institute may terminate the Order or any part thereof by a written notice to the Bidder, if:
 - a) The Bidder fails to comply with any material term of the Order.
 - b) The Bidder inform Institute of its inability to deliver the Material(s) or any part thereof within the stipulated Delivery Period or such inability otherwise become apparent.
 - c) The Bidder fails to deliver the Material(s) or any part thereof within the stipulated Delivery Period and/or to replace/rectify any rejected or defective Material(s) promptly.
 - d) The Bidder becomes bankrupt or goes into liquidation.
 - e) The Bidder makes a general assignment for the benefit of creditors.
 - f) A receiver is appointed for any substantial property owned by the Bidder.
 - g) The Bidder has misrepresented to Institute, acting on which misrepresentation Institute has placed the order on the Bidder.



10. Delivery of goods should be made at our stores located on campus near Mekhri Circle, Bengaluru – 560 080, at suppliers cost and risk.
11. **Factory Test Certificates:** Material test certificate should be sent along with the supply. The material will be checked by Institute's lab & the results of the lab will be the sole criteria for acceptance of the Item.
12. **Warranty: One Year Warranty from the date of supply.**
13. Defects, if any, during the warranty period are to be rectified free of charge by arranging free replacement wherever necessary. The Expenditure involved like Freight Charges, Custom Duty, Insurance Charges, Clearance Charges etc., is to be borne by the successful bidder.
14. In case the Equipment/System remains non-operational or performs below the desired level for more than One week after intimation of the fault in the Equipment/System then the Warranty period shall be extended for such downtime period for which the Equipment/System remained non-operational or performed below the desired level, without prejudice to any other terms and conditions of the Order.
15. **Payment:** 100% Payment after delivery of the goods/ material/ ordered item, acceptance & receipt of inspection report from the End-user, and submission of Performance Bank Guarantee for 3% as per **point no. 7.**
16. **LD Clause:** Time is the essence of this supply, delivery period mentioned in the Order should be strictly adhered to, otherwise LD clause will be applicable/ enforced. All deliveries should be completed within the stipulated delivery time of the Order due date. While the Institute reserves the right not to accept delivery in part or full, beyond the due date of delivery, liquidated damages at 0.5% per every week of delay, maximum of 10% will be levied. Exceptions: Force Majeure
17. **Post-Sales Support:**

The Equipment must be supported by service centre post sales manned by the principal Bidder's technical support Engineers. The post-sales support through this centre must be available 24 hours in a day, 7 days in a week and 365 days in a year, also it should be possible to contact the Principal bidder's support centre on a toll free number/ web mail.

If Service Centre doesn't exist at the time of bidding, successful bidder / OEM shall have to establish one within 30 days of award of order. Bidder/ OEM should provide the details of on-site support to be extended during the warranty period.
18. Successful bidder will have to ensure that adequate number of dedicated technical service personals / engineers are designated / deployed for attending to the Service Request in a time bound manner and for ensuring Timely Servicing / rectification of defects during warranty period, as per Service level agreement indicated in the relevant clause of the bid.
19. All disputes, arbitration, if any, are subject to jurisdiction of courts in Bengaluru, Karnataka, India only.



FORM OF BID-SECURITY DECLARATION

[The Bidder should fill in this Form on Letter Head in accordance with the instructions indicated]

To

The Administrative Officer,
Raman Research Institute,
C.V. Raman Avenue, Sadashivanagar,
Bengaluru – 560 080.

Ref: Tender Ref. No. **NIT-250418-2025-2026 dated: 25.07.2025**

We, the undersigned declare that:

We know that the bid should be supported by a Bid Security Declaration in accordance with your conditions.

We hereby declare that the prices offered by us against RRI bid Document No. **NIT-250418-2025-2026 dated: 25.07.2025** for **Procurement of Electro-Optic Modulators** will be firm for a period of 180 days or the date when the tenders are finalized, whichever is earlier.

We accept to automatically be suspended from being eligible for bidding in any order in RRI for a period of 3 years from the date of opening of Bid, if we are in breach of our obligation(s) under the bid conditions, because we:

After having been notified of the acceptance of our bid by the Ordering Authority within the period of bid validity:

- 1) We failed or refused to furnish a Performance Security in accordance with the Condition of the Bid Document No. **NIT-250418-2025-2026 dated: 25.07.2025**
- OR
- 2) We failed or refused to sign the order.

We know that this Bid – Security Declaration will expire, if order is not awarded to us, upon:

- 1) Your notification to us of the name of the successful bidder or
- 2) Twenty – eight days after the expiration of our Bid validity or any extension to it

Dated this ____day of_____

For and on behalf of M/s._____

Address:

Signature

Name

In the capacity of

seal/ stamp

